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Substitute for form 1449APTO
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
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Complete if Known	
Application Number	10/789,042
Filing Date	February 27, 2004
First Named Inventor	Ahn, Kie
Group Art Unit	2815
Examiner Name	Wilson, Allan Richards

Attorney Docket No: 1303.050US2

		US PAT	ENT DOCUMENTS	
Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Filing Date If Appropriate
how	US-20010030352A1	10/18/2001	Ruf, Alexander, et al.	02/28/2001
1	US-20020068466A1	06/06/2002	Lee, S., et al.	05/31/2001
	US-20020122885A1	09/05/2002	Ahn, Kie Y.	03/01/2001
1	US-20020142536A1	10/03/2002	Zhang, F., et al.	04/22/2002
	US-20020177282A1	11/28/2002	Song, S-H	12/18/2001
	US-20020192975A1	12/19/2002	Ahn, Kie Y.	06/17/2002
	US-20020192979A1	12/19/2002	Ahn, Kie Y.	06/17/2002
	US-20030003635A1	01/02/2003	Paranjpe, A. P., et al.	05/23/2001
	US-20030003702A1	01/02/2003	Ahn, Kie Y.	08/26/2002
	US-20030017717A1	01/23/2003	Ahn, Kie Y.	07/18/2001
	US-20030045060A1	03/06/2003	Ahn, Kie Y., et al.	08/30/2001
	US-20030045078A1	03/06/2003	Ahn, Kie Y., et al.	08/30/2004
	US-20030049942A1	03/13/2003	Haukka, S., et al.	08/22/2002
	US-20030059535A1	03/27/2003	Luo, L., et al.	09/25/2001
	US-20030104666A1	06/05/2003	Bojarczuk, Jr., N. A., et al.	12/20/2002
	US-20030119246A1	06/26/2003	Ahn, Kie Y.	12/20/2001
	US-20030119291A1	06/26/2003	Ahn, Kie Y., et al.	12/20/2001
	US-20030132491A1	07/17/2003	Ahn, Kie Y.	01/17/2002
	US-20030207032A1	11/06/2003	Ahn, Kie Y., et al.	05/02/2002
i	US-20030207540A1	11/06/2003	Ahn, Kie Y., et al.	05/02/2002
	US-20030227033A1	12/11/2003	Ahn, Kie Y., et al.	06/05/2002
	US-20030235961A1	12/25/2003	Metzner, C., et al.	04/04/2003
	US-20040007171A1	01/15/2004	Ritala, Mikko, et al.	07/10/2003
	US-20040009679A1	01/15/2004	Yeo, J., et al.	07/10/2003
	US-20040023461A1	02/05/2004	Ahn, Kie Y., et al.	07/30/2002
	US-20040038554A1	02/26/2004	Ahn, Kie Y.	08/21/2002
	US-20040043541A1	03/04/2004	Ahn, Kie Y., et al.	08/29/2002
	US-20040043569A1	03/04/2004	Ahn, Kie Y., et al.	08/28/2002
	US-20040043635A1	03/04/2004	Vaartstra, B. A.	08/28/2002
	US-20040110348A1	06/10/2004	Ahn, Kie Y., et al.	12/04/2002
	US-20040110391A1	06/10/2004	Ahn, K. Y., et al.	12/04/2002
	US-20040144980A1	07/29/2004	Ahn, Kie Y., et al.	01/29/2003
	US-20040159863A1	08/19/2004	Eldridge, Jerome M., et al.	02/18/2004
	US-20040164357A1	08/26/2004	Ahn, Kie Y., et al.	02/27/2004
	US-20040164365A1	08/26/2004	Ahn, Kie Y., et al.	02/27/2004
	US-20040175882A1	09/09/2004	Ahn, Kie Y., et al.	03/04/2003
	US-20040183108A1	09/23/2004	Ahn, Kie Y.	01/27/2004
	US-20040185654A1	09/23/2004	Ahn, Kie Y.	01/30/2004
	US-20040233010A1	11/25/2004	Akram, Salman , et al.	05/22/2003
4	US-20040262700A1	12/30/2004	Ahn, Kie Y., et al.	06/24/2003

EXAMINER L

DATE CONSIDERED 8/31/0(

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Substitute for form 1449APTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	Complete il Known		
	Application Number	10/789,042	
	Filing Date	February 27, 2004	
	First Named Inventor	Ahn, Kie	
	Group Art Unit	2815	
	Examiner Name	Wilson, Allan Richards	
Sheet 2 of 4	Attorney Docket No: 1303.050US2		

US PATENT DOCUMENTS					
Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Filing Date If Appropriate	
HOR	US-20050009370A1	01/13/2005	Ahn, Kie Y.	08/04/2004	
1	US-20050020017A1	01/27/2005	Ahn, Kie Y., et al.	06/24/2003	
	US-20050023574A1	02/03/2005	Forbes, L., et al.	09/02/2004	
	US-20050023584A1	02/03/2005	Derderian, G. J., et al.	02/03/2005	
	US-20050023594A1	02/03/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050023624A1	02/03/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050023625A1	02/03/2005	Ahn, K. Y., et al.	08/31/2004	
—	US-20050023626A1	02/03/2005	Ahn, K. Y., et al.	08/31/2004	
_	US-20050023627A1	02/03/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050026374A1	02/03/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050029547A1	02/10/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050029604A1	02/21/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050029605A1	02/10/2005	Ahn, K Y., et al.	08/31/2004	
-	US-20050030825A1	02/10/2005	Ahn, K. Y.	08/31/2004	
	US-20050032292A1	02/10/2005	Ahn, K. Y., et al.	08/31/2004	
	US-20050032342A1	02/10/2005	Forbes, L., et al.	08/30/2004	
	US-20050034662A1	02/17/2005	Ahn, K. Y.	08/31/2004	
	US-20050037563A1	02/17/2005	Ahn, Kie Y.	08/31/2004	
	US-20050054165A1	03/10/2005	Ahn, K. Y., et al.	03/31/2003	
	US-20050077519A1	04/14/2005	Ahn, Kie, et al.	10/10/2003	
	US-20050087134A1	04/28/2005	Ahn, K. Y.	08/31/2004	
	US-20050124174A1	06/09/2005	Ahn, K. Y., et al.	01/07/2005	
	US-20050138262A1	06/23/2005	Forbes, Leonard	12/18/2003	
	US-20050145957A1	07/07/2005	Ahn, K. Y., et al.	02/16/2005	
	US-20050158973A1	07/21/2005	Ahn, K. Y., et al.	01/14/2005	
	US-20050164521A1	07/28/2005	Ahn, Kie Y., et al.	03/21/2005	
	US-20050227442A1	10/13/2005	Ahn, K. Y., et al.	06/09/2005	
	US-20050277256A1	12/15/2005	Ahn, K. Y., et al.	07/11/2005	
	US-20050280067A1	12/22/2005	Ahn, K. Y., et al.	08/26/2005	
	US-20060000412A1	01/05/2006	Ahn, K. Y., et al.	08/29/2005	
	US-20060001151A1	01/05/2006	Ahn, K. Y., et al.	08/26/2005	
	US-20060003517A1	01/05/2006	Ahn, K. Y., et al.	08/29/2005	
+	US-20060008966A1	01/12/2006	Forbes, L., et al.	08/31/2005	
	US-20060024975A1	02/02/2006	Ahn, Kie Y., et al.	08/02/2004	
	US-20060043492A1	03/02/2006	Ahn, K. Y., et al.	08/29/2005	
	US-20060043492A1	03/02/2006	Ahn, K. Y., et al.	08/31/2004	
	US-20060045505A1	03/02/2006	Ahn, K. Y., et al.	08/26/2004	
	US-20060046503A1	03/02/2006	Ahn, K. Y., et al.	08/31/2004	
+	US-6.200.893	03/13/2001	Sneh, O.	03/11/1999	
- d)-	US-6,404,027	06/11/2002	Hong, Minghwei, et al.	02/07/2000	

EXAMINER DI

DATE CONSIDERED 8/31/06

PTO/SB/084(10.01)
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Approved for use through 10/31/2002, OMB 651-0031
Approved for use through 10/31/2002, OMB 651-0031

Substitute for form 1443APTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) Sheet 3 of 4	Complete il Known		
	Application Number	10/789,042	
	Filing Date	February 27, 2004	
	First Named Inventor	Ahn, Kie	
	Group Art Unit	2815	
	Examiner Name	Wilson, Allen Richards	
	Attorney Docket No: 1	1303.050US2	

Examiner	USP Document Number	Publication	TENT DOCUMENTS Name of Patentee or Applicant of cited Document	Filing Date	
initial *		Date	•	If Appropriate	
10N	US-6,441,417	08/27/2002	Zhang, Fengyan , et al.	03/28/2001	
	US-6,444,592	09/03/2002	Ballantine, A. W., et al.	06/20/2000	
	US-6,509,280	01/21/2003	Choi, Sung-Je	02/13/2002	
	US-6,541,079	04/01/2003	Bojarczuk, Jr., N. A., et al.	10/25/1999	
	US-6,551,929	04/22/2003	Kori, M., et al.	06/28/2000	
	US-6,592,942	07/15/2003	Van Wijck, M. A.	07/07/2000	
	US-6,632,279	10/14/2003	Ritala, M., et al.	10/13/2000	
	US-6,638,859	10/28/2003	Sneh, O., et al.	09/27/2002	
	US-6,652,924	11/25/2003	Sherman, A.	05/24/2001	
	US-6,674,138	01/06/2004	Halliyal, A., et al.	12/31/2001	
	US-6,699,747	03/02/2004	Ruff, Alexander, et al.	11/18/2002	
	US-6,709,989	03/23/2004	Ramdani, J., et al.	06/21/2001	
	US-6,767,582	07/27/2004	Elers, K.	04/11/2002	
	US-6,777,353	08/17/2004	Putkonen, M.	04/08/2003	
	US-6,780,704	08/24/2004	Raaijmakers, Ivo, et al.	12/03/1999	
	US-6,787,413	09/07/2004	Ahn, Kie Y.	06/17/2002	
	US-6,790,791	09/14/2004	Ahn, Kie Y., et al.	08/15/2002	
	US-6,804,136	10/12/2004	Forbes, Leonard	06/21/2002	
	US-6,812,100	11/02/2004	Ahn, K. Y., et al.	03/13/2002	
1	US-6,821,862	11/23/2004	Cho, Hag-Ju	06/27/2001	
	US-6,821,873	11/23/2004	Visokay, M. R., et al.	06/28/2002	
	US-6,831,315	12/14/2004	Raaijmakers, Ivo , et al.	02/22/2001	
	US-6,852,167	02/08/2005	Ahn, K. Y.	03/01/2001	
	US-6,867,097	03/15/2005	Ramsbey, M. T., et al.	10/28/1999	
	US-6,888,739	05/03/2005	Forbes, L.	06/21/2002	
	US-6,893,984	05/17/2005	Ahn, Kie Y., et al.	02/20/2002	
	US-6,900,122	05/31/2005	Ahn, Kie Y., et al.	12/20/2001	
	US-6,914,800	07/05/2005	Ahn, K. Y., et al.	08/31/2004	
	US-6,921,702	07/26/2005	Ahn, Kie Y., et al.	07/30/2002	
	US-6,930,346	08/16/2005	Ahn, K. Y., et al.	08/31/2004	
	US-6,950,340	09/27/2005	Bhattacharyya, A.	04/10/2004	
	US-6,952,032	10/04/2005	Forbes, L., et al.	08/31/2004	
	US-6,958,302	10/25/2005	Ahn, K. Y., et al.	12/04/2002	
	US-6,979,855	12/27/2005	Ahn, K. Y., et al.	01/27/2004	
	US-7,026,694	04/11/2006	Ahn, K. Y., et al.	08/31/2004	
	US-7,045,430	05/16/2006	Ahn, K. Y., et al.	05/02/2002	
V	US-7,049,192	05/23/2006	Ahn, K. Y., et al.	06/24/2003	

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EXAMINER 4 /SE 72		DATE CONSIDERED 8/31/06
DOMINER 2		

FOREIGN PATENT DOCUMENTS

PFO/SE/06A/10-01)
Approved for use through 10/31/2002, OMB 551-0001
US Palent & Tradement Office: U.S. GEPARTMENT OF A CASE PROVIDERS

Substitute for form 1449APTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	Under the Papareon Reduction Act of 1995, no persons are required to respond to a opticular of information unters it contains a visid OMB control number Compilete if Known			
	Application Number	10/789,042		
	Filing Date	February 27, 2004		
	First Named Inventor	Ahn, Kie		
	Group Art Unit	2815		
	Examiner Name	Wilson, Allan Richards		
Sheet 4 of 4	Attorney Docket No: 1303.050US2			

Examiner	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited	⊤ 2
initials*		Publication Date	Document	

	OTHER	R DOCUMENTS NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No '	include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	1,
LOP		AHN, KIE Y., "ALD OF AMORPHOUS LANTHANIDE DOPED TIO _X FILMS",	
<u></u>		U.S. Application Serial No. 11/092,072; filed March 29, 2005 AHN, KIE Y., "ATOMIC LAYER DEPOSITED HAFNIUM TANTALUM OXIDE	
1		DIELECTRICS", U.S. Application Serial No. 11/029,757; filed January 5, 2005	
 		AHN, KIE Y., "ATOMIC LAYER DEPOSITED LANTHANUM HAFNIUM OXIDE	
		DIELECTRICS", U.S. Application Serial No. 11/010,529; filed December 13.	
		2004	
		AHN, KIE Y., "ATOMIC LAYER DEPOSITION OF Hf3N4/HfO2 FILMS AS GATE	
1 1		DIELECTRICS*, U.S. Application Serial No. 11/063,717; filed February 23, 2005	
		AHN, KIE Y., "ATOMIC LAYER DEPOSITION OF Zr ₃ N ₄ /ZrO ₂ FILMS AS GATE	
1 1		DIELECTRICS*, U.S. Application Serial No. 11/058,563; filed February 15, 2005	
		AHN, KIE Y., "HYBRID ALD-CVD OF Pr _X O _Y /ZrO ₂ FILMS AS GATE	
1 1		DIELECTRICS", U.S. Application Serial No. 11/010,766; filed December 13,	ł
		2004	
1		CHIN, A., et al., "High Quality La ₂ O ₃ and Al ₂ O ₃ Gate Dielectrics with Equivalent	
! !		Oxide Thickness 5-10A*, Digest of Technical Papers. 2000 Symposium on VLSI	
		<u>Technology, 2000, Honolulu,(June 13-15, 2000),16-17</u>	
		COPEL, M., et al., "Formation of a stratified lanthanum silicate dielectric by	
]	reaction with Si(001)", Applied Physics Letters, 78(11), (March 12, 2001),1607-	
\vdash		1609	
}		GUHA, S, et al., "Atomic beam deposition of lanthanum-and yttrium-based oxide	
ļ		thin films for gate dielectrics", Applied Physics Letters, 77, (2000),2710-2712	
		LESKELA, M., "ALD precursor chemistry: Evolution and future challenges", J.	
\vdash		Phys. IV France, 9, (1999),837-852	
		MARIA, J. P., et al., "High temperature stability in lanthanum and zirconia-based gate dielectrics", Journal of Applied Physics, 90(7), (October 1, 2001),3476-3482	
 		RITALA, M., et al., "Atomic layer deposition of oxide thin films with metal	-
1 /		alkoxides as oxygen sources", Science, 288(5464), (Apr. 14, 2000),319-321	
		SNEH, OFER, "Thin film atomic layer deposition equipment for semiconductor	
l Ob		processing", Thin Solid Films, 402(1-2), (2002),248-261	
<u> </u>	1	I F : 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	

EXAMINER MS LE CONSIDERED 8/31/06